

**Defense Information Infrastructure (DII)
Common Operating Environment (COE)**

Version 3.0/B

Version Description Document for the Kernel (IRIX 6.2)

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NOTE: Courier font is used to indicate entries to be typed at the keyboard, operating system commands, file and directory names, and screen text. For example:

The file is located in the `DII_DEV` directory.

1. System Overview

The Defense Information Infrastructure (DII) Common Operating Environment (COE) will normally make available a large number of segments, not all of which are required for every application. The DII COE Kernel is the minimum set of software required on every workstation regardless of how the workstation will be used. These components include the operating system and windowing services, as well as external environment interfaces. The DII COE Kernel for IRIX 6.2 includes the following components:

- IRIX 6.2 Operating System (installed before the DII COE Kernel)
- System Administration function
- Security Administration function (not including Accounts and Profiles)
- Runtime tools
- Commercial Off-the-Shelf (COTS) software [including desktop graphical user interface (GUI) and windowing environment]
- Government Off-the-Shelf (GOTS) software.

These components can be broken down into the following features:

Operating System

IRIX 6.2 Operating System. Reference the *DII COE Kernel Installation Guide (IRIX 6.2)* for information about installing the IRIX 6.2 Operating System.

System Administration Function

The System Administration function is used to provide the capability to print ASCII text, select and configure printers, perform local queue management, manage print jobs, and close windows; reboot or shut down the system, mount file systems, and format hard drives; load or install segments; and change machine ID, set system time, configure a workstation as either a DNS client or a server, set routing configuration, and configure Network Information Service (NIS). The system administrator's account group sets the system administrator's environment to execute the functions listed above. Reference the *DII COE System Administrator's Guide (HP-UX 10.20 and Solaris 2.5.1)* for more information about system administration functionality.

Security Administration Function

The security administrator's account group sets the security administrator's environment.

Runtime Tools

Runtime tools are used to support the segment installation process. The following runtime tools are included on the DII COE 3.0/B Kernel tape. Some of the tools can be run from the command line, and some can be run from other code using published Application Programmer Interfaces (APIs). The COEInstaller tool can also be run from the System Administration pull-down menu. Reference the *DII COE Programming Guide (IRIX 6.2)*, the *DII COE API Reference Guide (IRIX 6.2)*, and the *DII COE Integration and Runtime Specification* for more information about these tools and their functionality.

- **COEAskUser** Version 1.0.0.6—Displays a message to the user and expects the user to choose one of two buttons in response. The COEAskUser tool can be called from anywhere.
- **COEFindSeg** Version 1.0.0.6—Returns information about a requested segment.
- **COEInstaller** Version 1.0.0.9—Displays a list of segments that may be installed from tape, disk, or other electronic media. The COEInstaller tool can be run from the command line, as well as from the System Administration pull-down menu.
- **COEInstError** Version 1.0.0.6—Displays an error message to the user. It can be run from the command line, but it is most often called from within a PreInstall, PostInstall, or DEINSTALL script.
- **COEMsg** Version 1.0.0.6—Displays a message to the user from within a PreInstall, PostInstall, or DEINSTALL script.
- **COEPrompt** Version 1.0.0.6—Displays a message to the user and expects the user to enter a response from within a PreInstall, PostInstall, or DEINSTALL script.
- **COEPromptPasswd** Version 1.0.0.6—Displays a message to the user and waits for the user to enter a password. The COEPromptPasswd tool can be run from the command line, but it is most often called from within a PreInstall or PostInstall script.
- **COEUpdateHome** Version 1.0.0.4—Updates the home environment within a script file to point to where a segment actually was installed.

COTS Software

The following COTS software helps to provide the foundation of the DII COE software environment:

- **X Windows** (Version X11R6)
- **Motif** (Version 1.2.4)
- **Triteal Enterprise Desktop (TED) Common Desktop Environment (CDE)** (Version 4.2)—provides windows, workspaces, controls, indicators, and a front panel to help users organize and manage work.

2. Referenced Documents

The following documents are referenced in this Version Description Document (VDD):

- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Kernel Installation Guide (IRIX 6.2)*, DII.30B.IRIX62.IG-1, Inter-National Research Institute (INRI), May 8, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) System Administrator's Guide (HP-UX 10.20 and Solaris 2.5.1) Version 3.1*, DII.31.UNIX.AG-1, Inter-National Research Institute (INRI), April 14, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Programming Guide (IRIX 6.2)*, DII.30B.IRIX62.PG-1, Inter-National Research Institute (INRI), May 8, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Application Programmer Interface (API) Reference Guide (IRIX 6.2)*, DII.30B.IRIX62.RG-1, Inter-National Research Institute (INRI), May 8, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration and Runtime Specification Version 2.0*, DII COE I&RTS:Rev 2.0, Inter-National Research Institute (INRI), October 23, 1995.

3. Version Description

3.1 Inventory of Materials Released

- Magnetic media: Two 4mm DATs consisting of the DII COE Kernel in `inst` format, Version 3.0/B (IRIX 6.2).
- Soft-copy Documentation: One 3.5" floppy diskette (WordPerfect 6.0 for Windows format) containing the *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Version Description Document for the Kernel (IRIX 6.2)*, Document Control No. DII.30B.IRIX62.Kernel.VDD-1, May 8, 1997.
- Hard-copy Documentation: Two hard copies of the aforementioned VDD.

3.2 Software Changes

This delivery contains no software changes.

4. Installation Instructions

Reference the *DII COE Kernel Installation Guide (IRIX 6.2)* for instructions on installing the DII COE Kernel.

5. Kernel Known Problems and Errors

Reference the following table for a list of known problems and errors with the DII COE Version 3.0/B Kernel (IRIX 6.2).

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
Total Open Known Problems and Errors: [24]	
INRI Number:	RTO00001409
Agency Number:	None.
Short Description:	The Installation Log gives conflicting messages when deinstalling multiple patches.
Long Description:	The COEInstaller successfully deinstalls two patches selected together for deinstallation (e.g., BRAVO.P1 and TestSeg.P3), but the Installation Log gives conflicting messages: "(E) Could not unlink /h/BRAVO/Patches/h/BRAVO/Patches/P1 Segment (TestSegment BRAVO.P1) successfully deinstalled. Segment (TestSegment BRAVO) successfully deinstalled."
INRI Number:	RTO00001559

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
Agency Number:	None.
Short Description:	When patches and their affected segments are deinstalled, deinstallation does not seem complete.
Long Description:	When patches and their affected segments are deinstalled, deinstallation does not seem complete. The directory structure of <affected segment>/Patches remains intact, although the directories contain only dot files. The name of the affected segment and the Patches directory structure should be removed during the deinstallation process.
INRI Number:	RTO00001560
Agency Number:	None.
Short Description:	The COEInstaller displays an error message stating it is unable to read the VERSION descriptor when installing segments.
Long Description:	The COEInstaller displays an error message stating that it is unable to read the VERSION descriptor when installing segments. Although the permissions are correct, the ownerships are inconsistent. The message also should indicate which segment it is failing on during installation.
INRI Number:	RTO00001561
Agency Number:	None.
Short Description:	During kernel installation, the user cannot press the space bar when told to "Press any key to continue".
Long Description:	During kernel installation, the following message appears: "System will now reboot, Press any key to continue". The space bar, however, does not allow the installation to continue; therefore, the statement "any key" is not true. Pressing the [Return] key allows the installation to continue; however, further testing may be required to determine if other keys work.
INRI Number:	RTO00001563
Agency Number:	None.
Short Description:	During power up, the system hung while trying to mount a directory from another workstation (which was down).
Long Description:	During power up, the system hung while trying to mount a directory from another workstation (which was down). The following message appeared: "Port mapper failure: timed out." Despite this timeout message, however, the system continues to hang, as shown by the following message: "mount retrying /h/data/global." The system should time out and start up without mounting this directory.
INRI Number:	RTO00001564
Agency Number:	None.
Short Description:	

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
The Disk Manager will hang whenever it is started and a file system which it is mounted on another system is not available.	
Long Description: The Disk Manager will hang whenever it is started and a file system which it is mounted on is not available (i.e., when the remote system is powered off or the file system has been removed).	
INRI Number: RTO00001566 Agency Number: None. Short Description: The system cannot be shutdown using the Shutdown System pull down menu option. Long Description: The system cannot be shutdown using the Shutdown System pull down menu option. The system can, however, be rebooted using the Reboot System pull down menu option.	
INRI Number: RTO00001583 Agency Number: None. Short Description: The audit file fills up quickly and immediately shuts down to single user mode. Long Description: During deinstallation of several segments, the system automatically shuts down to single user mode. Another workstation that was remotely logged in at the time received the following message: "ROADCAST MESSAGE: from ROOT (???) ... Warning: All audit output paths fullsystem going down in 10 seconds." Note: The system had been loaded that same morning, so the audit log should not have taken up that much space yet.	
INRI Number: RTO00001584 Agency Number: None. Short Description: COEPrintServ was running twice before any print actions or printers were configured. Long Description: COEPrintServ was running twice before any print actions or printers were configured. (Note that this problem is not repeatable on demand but has been noted several times on several different workstations.)	
INRI Number: RTO00001585 Agency Number: None. Short Description: Windows that are open when the user exits the root account are still open the next time the user logs in to root. Long Description: Windows that are open when the user exits the root account are still open the next time the user logs in to root. (Note: Any terminal emulator windows that remain open no longer have the information that was recorded during the first	

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
login session.) All windows should exit at user account exit.	
INRI Number:	RTO00001586
Agency Number:	None.
Short Description: The Mailer control on the CDE Front Panel does not work.	
Long Description: The Mailer control on the CDE Front Panel does not work. An error message indicates, "Mailer has not been properly installed, and cannot run because the execution group is incorrectly set."	
INRI Number:	RTO00001587
Agency Number:	None.
Short Description: The CHANGE MACHINE ID window is missing field labels and has overlapping host name and IP address entry fields.	
Long Description: The CHANGE MACHINE ID window is missing the NEW MACHINE NAME and NEW MACHINE ADDRESS labels. In addition, the window has overlapping host name and IP address entry fields. Resizing the window does not correct the problem. Note: The user can still perform functions if he or she is familiar with using the CHANGE MACHINE ID window.	
INRI Number:	RTO00001588
Agency Number:	None.
Short Description: The Set Routes option does not actually change the route until the system is rebooted.	
Long Description: The Set Routes option does not actually change the route until the system is rebooted. The user must reboot the system, even though no message appears to inform the user that a reboot is required. (Note: The system should not need to be rebooted.)	
INRI Number:	RTO00001589
Agency Number:	None.
Short Description: Buttons in the CHANGE MACHINE ID window disappear when the window is resized larger.	
Long Description: Buttons in the CHANGE MACHINE ID window disappear when the window is resized larger.	
INRI Number:	RTO00001590
Agency Number:	None.
Short Description: Segments cannot be installed from the Segment Installation Server.	

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
Long Description:	Segments cannot be installed from the Segment Installation Server. Segments are not loading onto the Segment Installation Server correctly and, therefore, the Installer's NETWORK option is not functional. The problem could be related to the fact that the tar files within the segment have a size of zero.
INRI Number:	RTO00001591
Agency Number:	None.
Short Description:	Adding a new host that is not on the DNS server causes the Change Machine ID and Edit Local Hosts options to become inoperable.
Long Description:	With DNS configured, adding a new host (via Edit Local Hosts) that is not on the DNS server causes both the Change Machine ID and Edit Local Hosts options to become inoperable (i.e., they can no longer be selected but are not grayed out in the pull-down menu). As a result, the user must manually modify the /etc/hosts file to remove the offending entry. (Note: The problem occurs when adding both trusted and nontrusted hosts.)
INRI Number:	RTO00001592
Agency Number:	None.
Short Description:	Trusted hosts cannot be added on a NIS master.
Long Description:	Trusted hosts cannot be added to a NIS master, even though user selects the TRUSTED MACHINE box in the ADD MACHINE or EDIT MACHINE window, the host is added (or remains) untrusted. Trusted systems can only be added when NIS is disabled. Note that the systems attempted to be made trusted are listed in /.rhosts, but the remote user still must enter password to remote log in to the NIS master.
INRI Number:	RTO00001593
Agency Number:	None.
Short Description:	The ypserv process is running on a NIS client.
Long Description:	The ypserv process is running on a NIS client. Only the ypbind process should be running on the client. Despite the fact that the ypserv process is running, the client appears to still bind appropriately to the server (e.g., the ypcat passwd shows entries for the NIS master).
INRI Number:	RTO00001594
Agency Number:	None.
Short Description:	The Remove NIS option does not indicate when NIS has not already been configured.
Long Description:	If NIS is not configured and the Remove NIS option is selected, the option does not indicate that NIS is not enabled. Instead, it continues the machine interface (MMI) asking the user to confirm NIS removal.

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors	
INRI Number:	RTO00001595
Agency Number:	None.
Short Description:	NIS window fields are cut off and are hard to read.
Long Description:	NIS window fields (e.g., NIS domain name field and master hostname field) are cut off at the bottom so the data entered is hard to read and confirm.
INRI Number:	RTO00001596
Agency Number:	None.
Short Description:	The VERSION file for the XWindows COTS Segment is incorrect.
Long Description:	The VERSION file for XWindows contains X11R5, when the actual version should be X11R6.
INRI Number:	RTO00001597
Agency Number:	None.
Short Description:	The System Time window is not correctly sized.
Long Description:	The System Time window is not correctly sized, which makes it difficult for the user to inspect the time.
INRI Number:	RTO00001598
Agency Number:	None.
Short Description:	SGI Disk Manager: Selecting ro=client or rw=client from the Options pop in the Export/Unexport File System window does not work.
Long Description:	In the Export/Unexport File System window on SGI, selecting ro=client or rw=client from the Options pop-up menu does not properly set permissions; therefore, the user must manually type in the Options field any permission specific to a client. If selected from the pop menu, the permission appears in the Options field with garbage (specifically, "?\mn") before the permission setting. If the user does not remove this garbage and then exports the filesystem, the exported filesystem does not show up in the Current window but instead is added to the /etc/exports file with garbage preceding the permissions setting: "?\mnrw={workstation name}." This /etc/exports line should read: "-rw={workstation name}." Workaround: The user must manually enter rw={w/s name} or ro={w/s name} in the Options field of the Export/Unexport File System window in order to use that permission. Note: If DNS is configured, then the domain suffix must be appended to the workstation name.
INRI Number:	RTO00001599
Agency Number:	None.
Short Description:	

DII COE Version 3.0/B Kernel (IRIX6.2) Known Problems and Errors

In the Disk Manager window on SGI, the INITFD button is grayed out and unavailable.

Long Description:

In the Disk Manager window on SGI, the INITFD button is grayed out and unavailable.

6. Release Notes

COE Kernel

8. Installation of the IRIX 6.2 Operating System is a *destructive installation* because installation removes any previously installed software. Your disk will be overwritten as part of the installation process and all data will be lost.
9. With this Beta release, the user must shut down the system by typing the following command in a terminal emulator window:

```
shutdown [RETURN]
```

10. The C2 security level (auditing feature) is running automatically at installation time.
11. Since the C2 security level (auditing feature) is running automatically at installation time, the user must type the following commands before enabling NIS:

```
mv /etc/passwd /etc/passwd.orig [RETURN]
```

```
mv /etc/opasswd /etc/passwd [RETURN]
```

```
chmod atr /etc/passwd [RETURN]
```

The user can then run the NIS Initialize option.

12. Only the `sysadmin` and `secman` accounts and the `SA_Default` and `SSO_Default` profiles are supported.
13. Multi-head and multi-eye configurations are not supported.
14. Classifications cannot be assigned to profiles.
15. The capability to add, change, and delete Accounts and Profiles is not supported in this release.
16. In the Export/Unexport File System window, selecting `ro=client` or `rw=client` from the Options pop-up menu does not properly set permissions; therefore, the user must manually type in the Options field any permission specific to a client. Workaround: The user must manually enter `rw=[workstation name]` or `ro=[workstation name]` in the Options field of the Export/Unexport File System window in order to use that permission. Note: If DNS is configured, then the domain suffix must be appended to the workstation name.

COEInstaller Tool

1. The `AcctGrp` descriptor supports only one entry.
2. The default tape drive for IRIX 6.2 is `/dev/nrtape`.
3. The `Installation Log` only logs segment processing for the last segment(s) selected from the current installation.
4. No help options are available.
5. Disk space is not checked on `/h/data/global` when installing a global data segment.
6. NIS and Domain Name Service (DNS) servers are not updated when processing the `Network` descriptor.
7. The `$HOME_DIR` keyword in the `Requires` descriptor is not processed.
8. In order for network installation to work, the `/h/data/global` directory must be mounted from a machine that has been designated as the network installation master. If the `/h/data/global` directory is not mounted, then the `Disk Manager` must be used to export it from the machine that has been designated the master to the machine that needs to mount it. In addition, the machine that the segments are being installed from must be in the target machine's local host file or, if the machine is running DNS, the machine must be in the DNS file.
9. The Network Installation Server does not automatically export the disk partition that is loaded with segments. This partition must be exported explicitly using the `Disk Manager`. If the machine is the network installation master and also has segments loaded on it under the partition that contains `/h`, then this partition should be exported without exporting `/h/data/global`.
10. If the `Update Security Database` window appears during installation, the operator must close the window manually in order for the installation to continue.

COEAskUser, COEInstError, COEMsg, COEPrompt, and COEPromptPasswd

1. The COEAskUser, COEInstError, COEMsg, COEPrompt, and COEPromptPasswd tools support multi-line text. The following example uses the COEMsg tool to show how to display text over multiple lines:

```
COEMsg "this is line 1 \
This is line 2 \
This is the 3rd line"
```

2. The COEInstError process presently does not stop the processing of an installation. It will display an installation error message and return a -1 status code to the calling process. The calling process (i.e., PostInstall) must perform any cleanup to return a failed error status to the COEInstaller, which can then stop the installation.

COEUpdateHome Tool

1. COEUpdateHome must be run from within the directory of the script that the user is trying to update (typically the segment directory).

7. Patch List

Patch Name	Synopsis
SG0001270	RQS (requickstart) can damage C++ libraries
SG0001284	Tape patch adding LEOT/PEOT handing end DLT2x00XT, 4x00 and 7x00 support to 6.2
SG0001330	EFS Roll-up patch
SG0001397	sash patch for 6.2 XFS changes
SG0001418	IRIX 6.2 Networking roll-up Patch
SG0001485	IRIX 6.2 Networking Commands Patch
SG0001499	Mount command fixes for 6.2
SG0001516	Desktop security patch
SG0001537	fam roll-up patch
SG0001572	6.2 streams roll-up patch
SG0001574	X server patch for IRIX 6.2
SG0001608	NFS roll-up patch #5 for IRIX 6.2
SG0001613	XLV Roll-up #3
SG0001616	6.2 ln command patch
SG0001639	mail security fix (for 6.2)

Patch Name	Synopsis
SG0001667	XFS roll-up #6 for 6.2
SG0001686	netprint security patch for IRIX 6.2
SG0001717	All platform kernel roll-up patch